

eurecat

Centre Tecnològic de Catalunya

Global Commercialization
Conference and Workshop (GCCW)



Eurecat, innovation with an impact

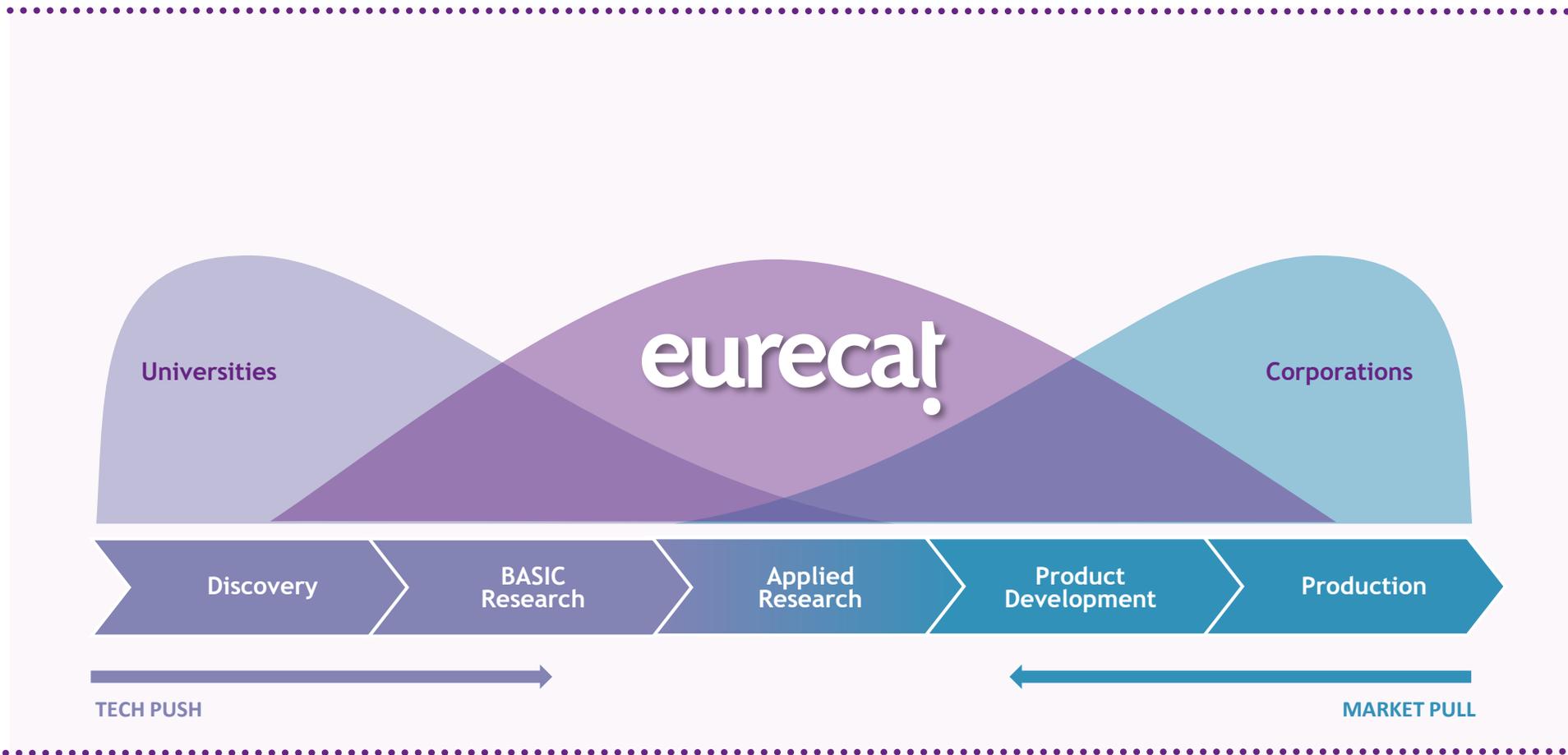
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International Development
Eurecat

14/07/21

euirecat

A young girl with dark hair is shown in profile, looking intently at a glowing digital interface. She is pointing her right index finger towards a bright point of light on the interface. The background is dark with a blue and purple glow, suggesting a futuristic or technological environment. The interface consists of a network of glowing blue lines and nodes, with a prominent circular structure on the left side.

We promote **business competitiveness** and the wellbeing of society **through applied research and innovation.**



Eurecat: Facts and figures

50%
of Eurecat's
Activity is with
SMEs

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Centre Tecnològic de Catalunya

+ 60

EU projects participation

+ 15

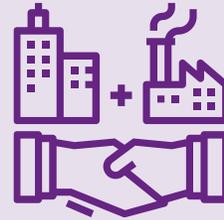
EU projects coordinated

+ 200

Large R&D consortia



50_M Turnover
2020



1.600 Customers



650 Professionals



22% PhD

Eurecat: a committed team, aligned with our companies

We have a results-oriented team committed to all our projects to offer companies excellent service.



+650
professionals

58%
men



21%
PhD



42%
women

Data corresponding to the end of 2019



Integration of multiple technologies

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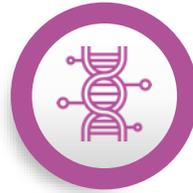
Industry

1. Advanced materials (metallics, composites, polymers) and new manufacturing processes
2. Functional printing and embedded devices
3. Interactive and autonomous robotics
4. Functional textiles
5. Chemical Technology
6. Innovation and product development



Digital

1. Sensor systems and IoT
2. Artificial intelligence
3. Big Data & Data Science
4. E-Health
5. Cybersecurity
6. Multimedia technologies



Biotechnology

1. Nutrition and health
2. Omic sciences



Sustainability

1. Water
2. Air
3. Soil
4. Waste
5. Energy
6. Batteries
7. Environmental impact

Our differential value:

Our multi-technological capacities allow us to face complex challenges.



Specialized in science and technology

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We are specialized in seven big areas to provide a comprehensive response to the main social, economic and environmental challenges.



Water technology



Medical devices



Personalized nutrition



Functional polymers



Artificial intelligence in industrial settings



Lightweight materials



Advanced robotics

Leading infrastructures

Eurecat has a complete set of laboratories, pilot plants and simulation tools to carry out projects and services with total professionalism and security.

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Plastic transformation pilot plant

It is southern Europe's largest pilot plant for new technologies in plastic transformation.

Technical experience and capacity focused on trials, manufacturing and industrialization, with the most innovative plastic transformation technologies (over-injection, printing, etc.).



Omic sciences centre

Unique scientific and technical infrastructure (ICTS) owned by the Rovira i Virgili University. The centre is managed by Eurecat and equipped with the latest technologies in metabolomics and provides integrated solutions with support units in proteomics, genomics, transcriptomics and advanced imaging.



Battery and electric vehicle laboratory

Centre of reference in southern Europe for applied research, trials and the development of battery packs.

We offer companies our state-of-the-art equipment and laboratories.



Perception and cognition laboratories

Biometric equipment and behavioural measurements to objectively understand human information processing on the level of perception, cognition and emotional in real-time. User experience modelling.



3D audio laboratory

3D audio laboratory totally equipped with the latest technology.

Eurecat created Sfèar, a production and postproduction technology for audiovisual content with immersive sound.

We are recognized as a **KET Technology Centre by the European Commission** thanks to our close collaboration with SMEs on their market-oriented research and innovation activities. We bring the most cutting-edge technologies closer to the productive fabric in a bid to initiate the move towards a **more efficient and sustainable productive model**.

+ 35 laboratories in:

- Industrial and collaborative robotics
- Additive manufacturing
- Technical assistance for moulds and material processes
- Surface treatment for functional printing
- Textile technology and high-performance fabrics.
- IoT Cybersecurity Lab, etc.

+ Data Science Clusters

HIGHLIGHT PROJECTS

ATM Àrea de Barcelona
Autoritat del Transport
Metropolità

Multimodal Mobility Analysis

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OBJETIVE:

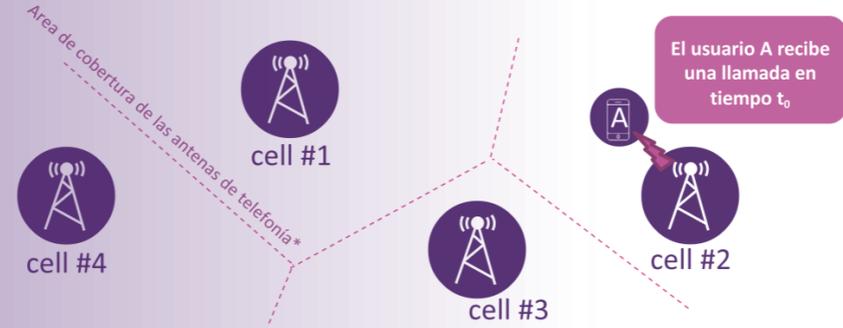
Provide the Barcelona Metropolitan Transport Authority (ATM) with origin-destination matrices in the province of Barcelona from the mobile phone data of public transport users and be able to identify different modes of transport.

DATA:

- CDR (Call Data Records: calls, SMS, conexiones de datos,...)
- Mobile Antena network: position, range, ..)

RESULTS:

Using BigData tools, an algorithm has been developed capable of identifying the significant journeys of users, and consequently obtaining the origin-destination matrices according to the modes of transport and according to the time slot. Through this technique it is possible to study aggregate mobility patterns in large territories



user_id	timestamp	action_type	cell_id	...
A	t_0	inbound_call	2	...

Datos CDRs

user_id	age	gender	rate	address
A	30	M	MyRate™	Rambla, BCN

Datos usuarios

cell_id	type	latitude	longitude	...
2	micro	40.9220	1.7612	...

Datos antenas



HIGHLIGHT PROJECTS

CIDAI Centre of Innovation
for Data tech
and Artificial Intelligence

The AI Digital Innovation in Catalonia

The CIDAI is a public-private initiative that promotes the transfer of knowledge and the implementation of joint projects between knowledge-generating entities (universities, research and innovation centers), technology and service providers, and user companies and institutions demanding innovative solutions in applied artificial intelligence.

The CIDAI aims to accelerate the adoption of reliable Artificial Intelligence in the business world and in society, as well as enhance the Catalan Artificial Intelligence ecosystem as an international reference pole by creating a connected, active and dynamic community that involves the majority of the agents.

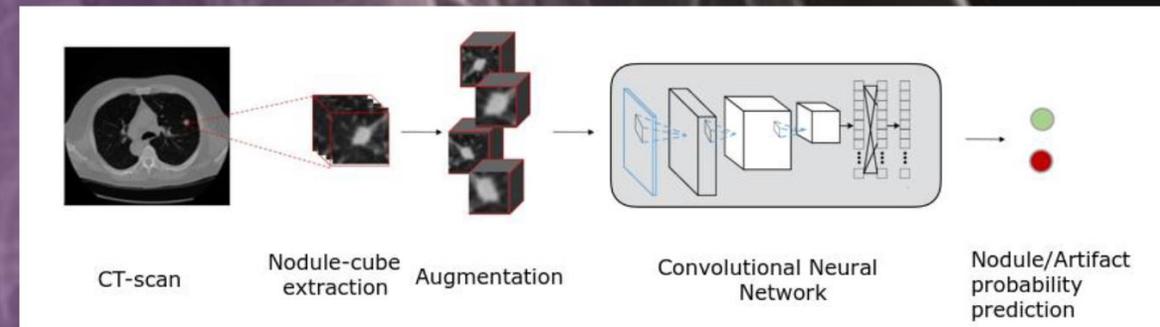
Coordinated by Eurecat, it is a key piece in the Catalonia AI strategy promoted by the Government of Catalonia.

www.cidai.eu

CAD Lung cancer

Computer Aided Diagnostic (CAD) tools may help to automatically detect lung tumours in thorax radiologic images which in clinical practice are only informed by specialist physicians in around 25% of the total cases.

The application of Deep Belief Networks to 1.000 images resulted in the capability to automatically identify lung tumors beyond the ones found by the care system in a proportion over 1%.



HIGHLIGHT PROJECTS



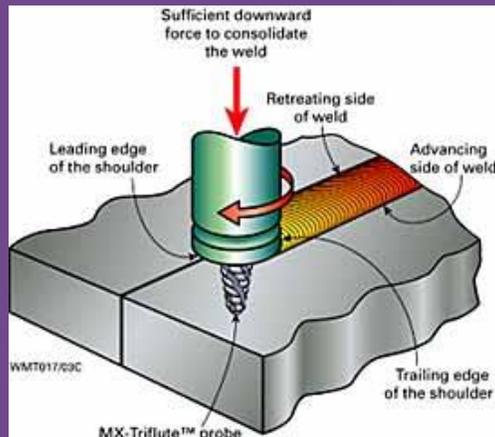
Predictive
Maintenance in
Aerospace

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SESAME: Smart European Space Access through Modern Exploitation of data science. Demonstrate the ability of European space companies to work together and reduce costs using data science for predictive quality, predictive maintenance and supply chain agility

USE CASE:

Friction Stir Welding (FSW) predictive quality & maintenance for the launcher assembly



MAIN TECHNOLOGIES

- *Analítica de datos*
- *Data fusion & feature engineering*
- *AI & ML for predictive quality*
- *Data processing and pattern recognition*



HIGHLIGHT PROJECTS



Advanced
manufacturing

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Sharework provides the intelligence, methods and tools required for the effective adoption of human-robot collaboration (HRC) in manufacturing processes lacking automation.

The project is developing a robotic system capable of understanding the environment and predicting human behaviour thanks to artificial intelligence and process data.

The technology will have the capacity to create a robot that can work in an environment that guarantees human safety.

www.sharework-project.eu



European
Commission

Horizon 2020
European Union Funding
for Research & Innovation

HIGHLIGHT PROJECTS



Coronavirus
SARS-CoV-2

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PROCEED

Prediction and support system for the comprehensive management of the evolution and use of resources in pandemics situations.

The **PROCEED** project aims to create an **augmented epidemiological model** to support decision-making through the collection, integration, and analysis of heterogeneous data sources (health, mobility, environment, wastewater and social).

Within the framework of the project, a **new system for predicting and supporting the comprehensive management of pandemics** is developed and deployed, defined as a personalised infrastructure and offering tools that allow managers, clinical professionals and patients to access data, results, indicators, predictions and recommendation throughout the various stages of the epidemic cycle.

NEXTGEN - Transformational circular economy solutions and systems around resource use in the water sector. NextGen project challenges embedded thinking and practices by bringing financially sustainable innovations to life.

To achieve this, NextGen will deliver technological, business and governance solutions for water in ten high profile demonstration cases across Europe and three associate partners worldwide.

NextGen project aims at accelerating, transfer and upscale circular economy practices worldwide by sharing our collective experiences and insights in citizen and stakeholder engagement, business models and services. A market place and targeted development of spin off activities will commercialise effective solutions.

The project comprises a strong partnership of water companies, industry, specialised SMEs, applied research institutes, technology platforms, city and regional authorities. For each of them, NextGen builds on an impressive portfolio of research and innovation projects and leverages multiple European and global networks to deliver real impact. It is lead and coordinated by Dutch water cycle research institute, [KWR](#). Eurecat is coordinating the technical work package of the project aiming at demonstrating the feasibility of innovative technological solution.

STEP UP Designing deep renovation for the decarbonisation of the EU building stock

StepUP is addressed to achieve the challenge of the decarbonisation process in the European buildings stock by 2050. A goal that, according to the Energy Performance of Buildings Directive (EPBD), will be effective if the market achieves a deep renovation energy, a key action to reduce drastically buildings' energy demand.



HIGHLIGHT PROJECTS



Batteries

Design, manufacturing and validation of the next generation of battery packs for the automotive mass-market.

The MARBEL project develops an innovative and competitive lightweight battery with increased energy density and shorter recharging times with the objective to accelerate the mass market take-up of electric vehicles.

The project innovation is based on the following main pillars:

- Advanced battery packaging using a Design for Assembly (DfA) and Disassembly (DfD) methodology.
- Lightweight and sustainable Battery Packaging.
- Solutions and processes for the sustainable dismantling and 2nd life
- Flexible advanced battery management systems.
- Ultra-Fast Charging strategies and enhanced thermal management
- Procedures for characterisation and validation of future performance and safety

Success stories with companies

We bring innovation to companies of all sizes, sectors and regions through multidisciplinary and multi-technology solutions aimed at boosting their competitiveness.

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Technological innovation to advance the company's digitalization

"We work with Eurecat to access knowledge and resources we do not have in our company. Professionally speaking, they treated us exquisitely, with great proximity. It was very easy for our company to build a trustworthy relationship with Eurecat."

[see video](#)



NISSAN

Making production centres more productive

"Our collaboration with Eurecat came about because it has both industrial and digital technological competences that are very closely aligned with our strategic transformation plans for our production centres."

[see video](#)



Products that improve the quality of people's lives through better mobility.

"Working with Eurecat and developing a project of this kind required an effort in innovation, improvement, the search for new elements and teamwork to overcome the challenge."

[see video](#)



International Cooperation

A young girl with dark hair is shown in profile, looking intently at a glowing, abstract network of blue lines and nodes. She is pointing her right index finger towards the network. The background is dark with a blue and purple glow, suggesting a digital or technological environment. The overall mood is one of curiosity and exploration.



Objective 1

To facilitate companies the access to international markets with technology



Objective 2

To promote research and innovation partnerships around the world



Objective 3

To commercialise our portfolio of technologies and services

International cooperation

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Barcelona
Corporate
Headquarters

Santiago de Chile
LATAM Headquarters



 **RMIT**
UNIVERSITY

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Centre Tecnològic de Catalunya



Cooperation Eurecat-South Korea

- Cooperation South Korea-Spain

- Bilateral Program KSEI (Korea & Spain Energy Innovation Program)
- Agreement between CDTI (Centre for the Development of Industrial Technology and the Korea Institute for Advancement of Technology (KIAT) and the Korea Institute of Energy Technology Evaluation and Planning (KETEP)
- Agreement between the National Research Council of Science and Technology and ACCIO (Catalan Government's agency for business competitiveness)



Cooperation Eurecat-South Korea

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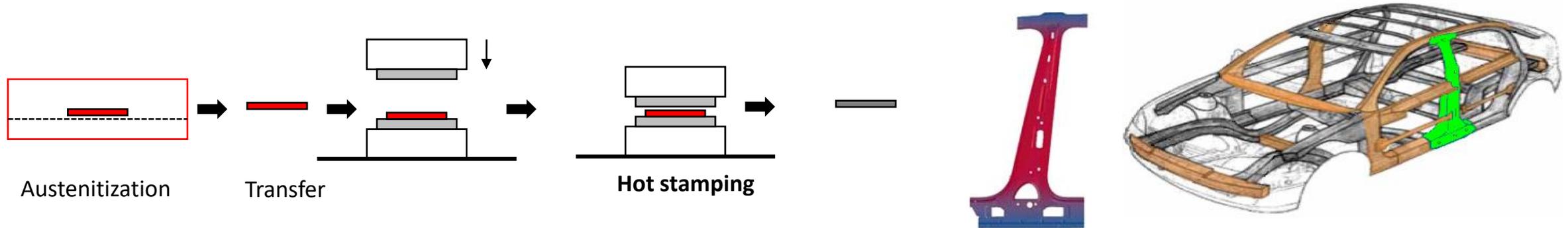
PathoCERT - Pathogen Contamination Emergency Response Technologies

The PathoCERT project researches and demonstrates a collection of novel, cost-effective and easy-to-use pathogen contamination emergency response technologies, tools and guidelines, which will be field validated by the first responders. PathoCERT has the objective to strengthen the coordination and response capability of first responders in handling waterborne pathogen contamination events and other potential and harmful illness spread out through water.



Cosmetic corrosion study of hot stamped components for automotive components

Hot stamping is commonly used in Automotive to manufacture high strength parts with safety requirements



The project addressed the following topics:

- Effect of Surface damage in a cosmetic corrosion resistance
- Effect of Al-Si coating color in a cosmetic corrosion resistance
- Study of the effect of welding on corrosion



- Accelerating the impact of innovation Spain-South Korea in the field of Artificial Intelligence. Seminar organised by CDTI and IITP
- Mobile World Congress 2021 - Korea Pavilion organised by KOTRA (Korea Trade-Investment Promotion Agency)



Acelerando el Impacto de la Innovación: España-Corea en Inteligencia Artificial

Fecha: 18 de junio, a las 9 h de España.

Organiza:

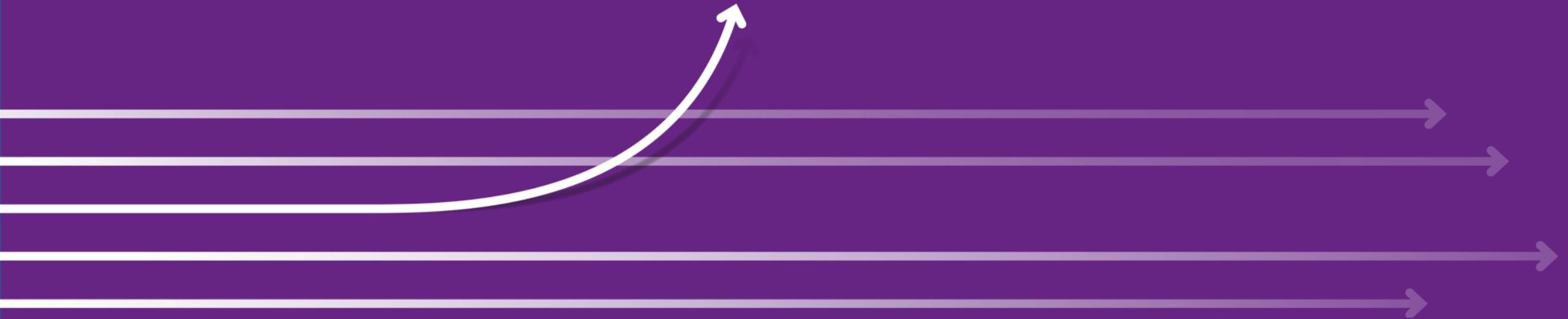


Colaboradores:



- Objectives of the cooperation:
 - Promote the collaboration with Korean technological centres and universities:
 - Development of R&D and Innovation Projects
 - Scientific exchange visits
 - Organization of scientific and technological seminars
 - Collaboration in joint education programmes
 - Potential use of laboratory facilities for specific projects
 - Promote the collaboration between Catalan and Korean companies.
 - Beginning 2022 Eurecat mission to South Korea to better know the innovation ecosystem

Thank you!



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"innovating for business"

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